

REMARKS/ARGUMENTS

In response to the Examiner's Office Action of June 1, 2005 the Applicant respectfully submits the accompanying Amendment to the claims and the below Remarks directed thereto.

The Applicant has updated Page 1 of the specification by deleting the first paragraph of Page 1 and replacing it with a paragraph entitled "Cross-Reference to Related Applications", showing full continuity of this application. The Applicant submits that this amendment introduces no new matter.

Claims 1-20 are currently pending in the present application. In the Amendment:

independent claim 1 is amended to clarify that the surface features of the first tool half are for molding the caps of the array and for subsequently retaining the array of molded caps for placement onto the wafer. Support for this amendment can be found, for example, at page 8, line 12-page 10, line 12 of the present specification; and

dependent claims 2-20 are unchanged.

It is respectfully submitted that the above amendment does not add new matter to the present application.

35 USC 102(e) Rejections

It is respectfully submitted that the subject matter of amended independent claim 1, and claims 2-6 and 19 dependent therefrom, is not disclosed by Salatino et al. (USP 5,798,557), for at least the following reasons.

In the present invention, the upper mold wafer 102 (first tool half) is processed so as to have recesses 106 (surface features) which are not only used in conjunction with the lower mold wafer 104 to mold the thermoplastic material of the sheet 134 into the array of protective caps 138 but are also used to retain the caps after molding so that the caps can be placed onto the chip wafer 144 using the upper mold wafer (see page 6, lines 25-33 and page 8, line 12-page 10, line 28 of the present specification). This arrangement and function of the first tool half surface features has been clarified in above-described amendment to claim 1.

On the other hand, Salatino discloses a system in which a lid wafer 260 is provided with a silicon layer 261 (used by the Examiner as the claimed first tool half) and an insulating layer 262 which is processed (masked and etched) to form cavities 263-265 to be used as the caps for the die substrate 202 (see col. 3, lines 3-47 of Salatino).

Similarly, in other embodiments of Salatino, a lid wafer 281 is provided as a multilayered structure by first providing an n+ silicon layer 280 which is selectively doped to form a p+ silicon region 282 therein (forming the claimed first tool half as used by the Examiner) and then oxidising the exposed surface of the p+ silicon region to form an insulating region 284 which is processed (masked and etched) to form a cavity 286 to be used as a cap for the die substrate (see col. 3, line 48-col. 4, line 2 of Salatino).

Thus, in each of the disclosed embodiments of Salatino, the silicon layer(s) of the lid wafer is not provided with surface features which are used for molding the insulating layer (caps) and then for subsequently retaining the caps for placement on the die substrate. Rather, deposition and oxidation processes are used to create the insulating layer on the flat and featureless silicon layer(s). Further, there is no suggestion from the disclosure of Salatino for one of ordinary skill in the art to modify the lid wafer of Salatino to provide such surface features for molding.

Thus, the subject matter of amended independent claim 1, and claims 2-20 dependent therefrom, is not disclosed or suggested by Salatino.

35 USC 103(a) Rejections

It is respectfully submitted that the subject matter of amended independent claim 1, and claims 2-20 dependent therefrom, is not taught or suggested by Miyajima (USP 6,350,113) in view of Cordes et al. (USP 6,390,439), for at least the following reasons.

As discussed above, in the claimed invention as amended the surface features of the first tool half are for molding the caps of the array and for subsequently retaining the array of molded caps for placement onto the wafer.

On the other hand, Miyajima discloses a system in which the upper molding die 20a,22a (used by the Examiner as the claimed first tool half) is provided with a release film 50 which is used to ensure that molded products, formed by solidifying resin between the upper molding die and the lower molding die 20b,22b, are released from the upper molding die when the dies are separated. Upon this release, the molded products are also ejected from the surface of the lower molding die by the ejector pins 30 (see col. 7, lines 6-52 and col. 8, line 56-col. 9, line 7 of Miyajima).

Thus, in Miyajima, the upper molding die is not provided with surface features which are used for molding the products and then for subsequently retaining the molded products for placement on a wafer. Rather, the molded products are immediately released from the upper (and lower) molding die once molding is complete. Further, there is no suggestion from the disclosure of Miyajima for one of ordinary skill in the art to modify the molding dies of Miyajima to omit the release film.

Cordes fails to make up for these deficiencies in Miyajima. This is because, Cordes does not teach or suggest providing a tool having a first tool half with surface features which are used for molding an array of protective caps and for retaining the molded caps for placement on a wafer.

Thus, the subject matter of amended claims 1-20 is not taught or suggested by Miyajima either taken alone or in combination with Cordes.

It is respectfully submitted that all of the Examiner's rejections have been traversed. Accordingly, it is submitted that the present application is in condition for allowance and reconsideration of the present application is respectfully requested.

Very respectfully,

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